#### Objection to the Application Papers

The Examiner objected to the application papers because a permanent copy was not provided. In particular, the Examiner indicated that the claims were easily erasable. This situation possibly was due to an inadvertent printer malfunction. Applicants submit under 37 C.F.R. §1.125(a) a copy of the claims, as filed, in permanent form. These are an exact reproduction of the claims, as filed. No new matter is introduced.

### Restriction Requirement

The Examiner imposed a restriction/election requirement under 35 U.S.C. §121. The Examiner indicated that two inventions were being claimed with the first invention (claims 1-32) involving a polishing dispersion and a method of polishing and a second invention (claims 33-38) directed to a coated device. Applicants affirm their election of claims 1-32 without traverse. Applicants have canceled claims 33-38 in view of the restriction requirement.

### <u>Trademarks</u>

The Examiner noted that the specification contained several references to trademarks. These were listed in the application as capitalized words. The Examiner has indicated that all the letters of the words should be capitalized and that the generic terminology should be included. Applicants have amended the specification accordingly.

### Rejections Under 35 U.S.C. §112

The Examiner rejected claims 1-32 under 35 U.S.C. §112, second paragraph as being indefinite. The Examiner indicated particular reasons for lack of clarity in particular claims. Applicants consider these issues sequentially. Applicants respectfully request reconsideration of the rejections based on the following comments.

The Examiner indicated claims 1 and 28 were indefinite since the terminology "effective no" was unclear with respect to

scope. Applicants have replaced this language with specific numerical values.

With respect to claims 5-9, the Examiner noted that "the solvent" lacked literal antecedent basis. Applicants have deleted references to the "solvent".

The Examiner indicated that claim 23 was indefinite for the use of the phrase "effectively having no" in reference to a limit on the particle size distribution. This phrase has been replaced with a quantitative value.

With respect to claim 27, the Examiner indicated that it was unclear what the "composition" was referring to. Applicants have amended the claim for clarity. In particular, the claim indicates that the surface comprises a plurality of compositions. This is described in the specification, for example, from page 49, line 29 to page 50, line 13. As an example, one composition can be copper, and the second composition can be tantalum nitride. Abrasion of the surface with the polishing composition removes material, i.e., the compositions. This claim is directed to polishing process that removes one material at a significantly different rate than the second material. In view of the amendment and the description in the specification, Applicants believe that the claim is clear.

The Examiner indicated that claim 31 was not drafted in a clear and concise manner. Applicants have amended the claim to change the format and to clarify the relationship between parts of the claim. The claim is directed to an abrading method that removes more material from the surface than approaches based on other polishing compositions. The abrasion procedure involves a dispersion of nanoparticles. Applicants believe that the amended claim is clear.

Applicants respectfully request the withdrawal of the rejection of claims 1-32 under 35 U.S.C. §112, second paragraph as being indefinite.

#### Objections to Claims

The Examiner objected to claim 16 for an informality. Applicants have amended claim 16 to insert "and". In view of the correction, Applicants respectfully request withdrawal of the objection to claim 16.

### Rejections Under 35 U.S.C. §103(a)

# A. Ishitobi et a., Grover et al., Kaufman et al., Farkas et al.

The Examiner rejected claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) U.S. Patent 5,935,278 to Ishitobi et al. (the Ishitobi patent) alone or in view of U.S. Patent 6,001,730 to Farkas et al. (the Farkas patent), 2) U.S. Patent 5,759,917 to Grover et al. (the Grover patent) alone or in view of the Farkas patent, or 3) U.S. Patent 5,783,489 to Kaufman et al. (the Kaufman patent) alone or in view of the Farkas patent. The examiner cited the Farkas patent, the Grover patent and the Kaufman patent for disclosing polishing compositions with nanoscale particles. Claims 29, 30 and 32 have been canceled without prejudice. Applicants respectfully request reconsideration of the rejection of the remaining claims based on the following comments.

"In rejecting claims under 35 U.S.C. §103, the examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). "Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant." Id. All claim limitations must be taught or suggested by the prior art. See MPEP 2143.03. "Obviousness cannot be predicated on what is unknown." In re Rijckaert, 28 USPQ2d at 1957, citing In re Spormann, 150 USPQ 449, 452 (CCPA 1966).

Assertions in a prior art reference do not support an anticipation or obviousness rejection unless the references place the claimed invention in the hands of the public. <u>Beckman Instruments Inc. v. LKB Produkter AB</u>, 13 USPQ2d 1301, 1304 (Fed.

Cir. 1989). "In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." <u>Id</u>. While a reference is prior art for all that it teaches, references along with the knowledge of a person of ordinary skill in the art must be enabling to place the invention in the hands of the public. <u>In re Paulsen</u>, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994). See also <u>In re Donohue</u>, 226 USPQ 619, 621 (Fed. Cir. 1985).

The proposition is well established that the prior art only renders a composition of matter unpatentable to the extent that the prior art provides a means of obtaining the composition.

To the extent that anyone may draw an inference from the Von Bramer case that the <u>mere</u> printed conception or the <u>mere</u> printed contemplation which constitutes the designation of a 'compound' is sufficient to show that such a compound is old, regardless of whether the compound is involved in a 35 U.S.C. 102 or 35 U.S.C. 103 rejection, we totally disagree. ... We think, rather, that the true test of any prior art relied upon to show or suggest that a chemical compound is old, is whether the prior art is such as to place the disclosed 'compound' in the possession of the public.

<u>In re Brown</u>, 141 USPQ 245, 248-49 (CCPA 1964) (emphasis in original) (citations omitted). Similarly, see <u>In re Hoeksema</u>, 158 USPQ 596, 600 (CCPA 1968) (emphasis in original):

We are certain, however, that the invention as a whole is the claimed compound <u>and</u> a way to produce it, wherefore appellant's argument has substance. There has been no showing by the Patent Office in this record that the claimed compound can exist because there is no showing of a known or obvious way to manufacture it; hence, it seems to us that the 'invention as a whole,' which section 103 demands that we consider, is not obvious from the prior art of record.

While there are valid reasons based on public policy as to why this defect in the prior art precludes a finding of obviousness under section 103, In re Brown, supra, its immediate significance in the present inquiry is that it poses yet another difference between the claimed invention and the prior art which <u>must</u> be considered in the context

of section 103. So considered, we think the differences between appellant's <u>invention as a whole</u> and the prior art are such that the claimed invention would not be obvious within the contemplation of 35 U.S.C. 103.

The Federal Circuit has further emphasized these issues. "But to be prior art under section 102(b), a reference must be enabling. That is, it must put the claimed invention in the hands of one skilled in the art." In re Sun, 31 USPQ2d 1451, 1453 (Fed. Cir. 1993) (unpublished). Assertions in a prior art reference do not support an anticipation or obviousness rejection unless the references place the claimed invention in the hands of the public. Beckman Instruments Inc. v. LKB Produkter AB, 13 USPQ2d 1301, 1304 "In order to render a claimed apparatus or (Fed. Cir. 1989). method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." Id. While a reference is prior art for all that it teaches, references along with the knowledge of a person of ordinary skill in the art must be enabling to place the invention in the hands of the public. <u>In re Paulsen</u>, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994). See also <u>In re Donohue</u>, 226 USPQ 619, 621 (Fed. Cir. 1985).

The Examiner asserted that the cited references have overlapping ranges with the claims and that the claims are therefore <u>prima facie</u> obvious. The Examiner further asserts that selection of solvent is an obvious modification. In addition, the Examiner asserts that particle size determines surface roughness so that polishing with the particles with a similar average particle size would result in the same surface roughness.

With respect to claims 1-28, the claims specify that less than 1 in 10<sup>6</sup> primary particles have a diameter greater than 3 times the average diameter. This is a characteristic of the dispersion that is not disclosed directly or with overlapping ranges in any of the cited references. With respect to overlapping ranges, the Examiner is evidently referring to the average particle size. However, all features of the claimed composition of matter

must be rendered obvious by the prior art, not just one selected feature. Furthermore, the polishing characteristics depend on the particle size distribution and not just the average particle size. Applicants do not believe that polishes with the claimed characteristics are disclosed in or rendered obvious by any of the cited references.

Applicants would first like to present evidence that polishes including silicon oxides or metal oxides generally have not been known with the claimed characteristics. To support this proposition, Applicants submit in an IDS with this Amendment four relevant references that show particle size distributions for silicon oxide or metal oxide nanoparticles. With respect to fumed silica, Applicants refer to U.S. Patent 5,246,624 to Miller et al. (the Miller patent), a copy of which is enclosed. The Miller patent describes the formation of colloidal dispersions with fumed The formation of fumed silica is described at column 1, lines 26-44. As described at column 1, lines 33-36, initially formed particles fuse to form "chain-like aggregates." aggregates have a range in size from 0.5 microns to 44 microns. Clearly, chain-like aggregates have a broad distribution in particle sizes since aggregate growth is inherently less controlled than particle growth from a single nucleus.

An aqueous phase method for the formation of silicon oxide particles from a silica gel is described in U.S. Patent 5,158,758 to Chieng et al. (the Chieng patent), a copy of which is enclosed. The materials have extremely small pore sizes, on the order of 5 nm to 20 nm (50 to 200 angstroms), see column 3, lines 16-20. When the materials were subsequently ground to form particles, the particles had micron scale diameters, see Example 3 and other examples of the Chieng patent. Furthermore, the particles have a very broad distribution in size, as shown in Table 4, relative to the very narrow distribution disclosed and claimed by Applicants.

An article by Schmidt et al., Fabrication of Agglomerate-Free Nanopowders by Hydrothermal Chemical Processing," Mat. Res. Soc. Symposium Proc. 50:21-31 (1998), copy enclosed, describes the production of silica and metal oxides by gel methods to produce particles with relatively narrow size distributions. Their secondary particle size distributions can be seen in Fig. 3b. Note that the particle size scale is a log scale, which inherently makes the distribution look much narrower than a linear scale. The distribution has an average of about 20 nm (0.02 microns) and there are particles with diameters of at least about 200 nm according to the plot. Thus, the distribution is much broader than the particle distribution that is claimed by Applicants.

In addition, Applicants refer to U.S. Patent 4,356,107 to Payne (the Payne patent). The Payne patent describes a specific approach to form silica particles with a narrow particle size distribution based on a heat treatment of a silica gel. As noted in the Payne patent, the silica particles formed directly by the sol gel method have a particle size distribution much broader than disclosed and claimed by Applicants. As disclosed in Example IV of the Payne patent, the resulting silica gel has a range of particle sizes between 65 nm and 130 nm. Based on this indicated range, the average particle size is also between 65 nm and 130 nm. The Payne patent does not teach or suggest how to obtain different average particle sizes outside of this range. Applicants have amended claim 1 to indicate that the average particle size is less than about 50 nm.

With respect to the references cited by the Examiner, the Ishitobi patent discloses the use of zirconium oxide, aluminum oxide or silicon oxide to polish nickel-phosphorous discs. The zirconium oxide was produced by a sol method. The resulting particles had an average particle size of 50 nm. See column 7, lines 3-59. However, as discussed above, sol approaches inherently give a broad range of particle sizes that would fall well outside

the claimed narrow particle size distribution ranges. Thus, the Ishitobi patent does not add any disclosure relevant to obtaining the narrow particles sizes claimed by Applicants in their dispersion.

The Grover patent discloses the use of conventional methods for the production of the abrasive particles for their polish. See, for example, from column 4, lines 30 to column 5, line 25. The abrasive particles described in the Grover patent do not have the extremely narrow particle size distributions disclosed and claimed by Applicants.

The Kaufman patent discloses polishes with abrasive particles. See, for example, column 4, lines 46-55. The particles are preferably nanoparticles produced by conventional methods. See, for example, column 4, lines 56-63 and column 5, lines 32-37. The Kaufman patent does not teach or suggest abrasive particles with the extremely narrow particle size distributions disclosed and claimed by Applicants.

Since the prior art does not teach or suggest how to produce particle dispersions with particles having the claimed narrow primary particle size distribution, the cited prior art does not render obvious claim 1 or any claims depending from claim 1.

With respect to claim 31, Applicants discovered that their highly uniform particles gave surprisingly high grinding rates. Applicants refer to Fig. 8 of U.S. Patent 5,861,054 to Miyashita et al. Generally, smaller particle sizes is associated with slower grinding rates. Therefore, Applicants' observation was a surprising result. None of the cited references teach or suggest this observation.

In view of the above comments, Applicant believe that a <u>prima facie</u> showing of obviousness has not been established. Applicants respectfully request the withdrawal of the rejection of claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) the Ishitobi patent alone or in view of the Farkas

patent, 2) the Grover patent alone or in view of the Farkas patent, or 3) the Kaufman patent alone or in view of the Farkas patent.

## B. Miyashita et al., Brancaleoni et al., and Farkas et al.

The Examiner rejected claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) U.S. Patent 5,861,054 to Miyashita et al. (the Miyashita patent) in view of the Farkas patent, or 2) U.S. Patent 5,264,010 to Brancaleoni et al. (the Brancaleoni patent) in view of the Farkas patent. The Examiner cited the Miyashita patent and the Brancaleoni patent for disclosing dispersions with nanometer scale particles. Applicants respectfully request reconsideration of the rejections based on the following comments.

As noted above, the Farkas patent does not disclose how to produce nanoparticles with the extremely narrow primary particle size distribution disclosed and claimed by Applicants. The Miyashita patent does not disclose methods for the production of silicon nitride or other abrasive particles for use in their polishing slurry. Therefore, the Miyashita patent evidently relies on commercially available abrasive particles, such as silicon nitride, to produce the slurries. Since the Miyashita patent does not teach or suggest the production of particles with the very narrow particle size distributions disclosed and claimed by Applicants, the combined disclosures of the Miyashita patent and the Farkas patent do not render Applicants' claimed invention obvious.

The Brancaleoni patent discloses a polishing composition including cerium oxide, fumed silica and colloidal silica. See, for example, column 4, lines 34-37. The fumed silica and colloidal or precipitated silica are commercial materials. See, for example, column 3, lines 62-67 and column 4, lines 7-17. Similarly, the Brancaleoni patent describes the use of commercially available cerium oxide. See, for example, column 6, lines 60-63. The

Brancaleoni patent does not teach or suggest the extremely narrow particle size distributions disclosed and claimed by Applicants. Therefore, the combined disclosures of the Brancaleoni patent and the Farkas patent do not render the claimed invention obvious.

Applicants respectfully request the withdrawal of the rejection of claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) the Miyashita patent in view of the Farkas patent, or 2) the Brancaleoni patent in view of the Farkas patent.

## <u>C.</u> <u>Picardi et al., Hirabayashi et al., Sasaki, Ishobi et al.</u> and Farkas et al.

The Examiner rejected claims 1-4 and 7-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) U.S. Patent 5,891,205 to Picardi et al. (the Picardi patent) in view of the Ishitobi patent and the Farkas patent, 2) U.S. Patent 5,575,885 to Hirabayashi et al. (the Hirabayashi patent) in view of the Ishitobi patent and the Farkas patent, or 3) U.S. Patent 4,983,650 to Sasaki (the Sasaki patent) in view of the Ishitobi patent and the Farkas patent. The Examiner cited the Picardi patent, the Hirabayashi and patent the Sasaki patent for disclosing the nanoparticles for surface polishing. Applicants respectfully request reconsideration of the rejections over the Picardi patent, the Hirabayashi patent, the Sasaki patent, the Ishitobi patent and the Farkas patent in view of the following comments.

The cited references only disclose particles with overlapping average particle sizes. Applicants' claims also specify features of the particle size distribution. With respect to patentability, the prior art must teach how to produce the claimed materials with all of their structural features in order to render the claimed invention obvious. As noted above, disclosures of the Ishitobi patent and the Farkas patent do not teach or suggest collections of particles with the extremely narrow primary particle size distribution claimed by Applicants.

The Picardi patent discloses polishing compositions formed from cerium oxide and silicon oxide. It is clear from a brief review of the photomicrographs in Figs. 1 and 2 of the Picardi patent that the distributions of particle sizes for the materials disclosed in the Picardi patent are much larger than the distributions claimed by Applicants. For example, in Fig. 1 there are many particles with very small diameters of 10 nm or less and several particles visible with diameters on the order of 50 nm. In Fig. 2 of the Picardi patent, the distribution may even be broader with many small particles not being clearly resolved in the photo.

The main focus of the Hirabayashi patent is on acidic and oxidizing components of a polishing composition. The Hirabayashi patent does disclose the use of abrasive particles in the nanometer size range, for example, at column 4, lines 60-67. The Hirabayashi patent does not describe the production of the abrasive particles. Therefore, the Hirabayashi patent evidently refers to the use of commercially available abrasive particles. The Hirabayashi patent does not teach or suggest collections of particles with the extremely narrow particle size distributions disclosed and claimed by Applicants.

The Sasaki patent describes a polishing composition with amorphous silica. The Sasaki patent describes the use of either colloidal silica or silica powder. See column 2, lines 30-45. The Sasaki patent does not teach or suggest any nonconventional approaches for the production of silica particles. Thus, the Sasaki patent does not teach or suggest approaches to produce the abrasive particles disclosed and claimed by Applicants.

Since the Picardi patent, the Hirabayashi patent, the Sasaki patent, the Ishitobi patent and the Farkas patent are deficient with respect to disclosing collections of particles with the extremely narrow primary particle size distributions, the combined disclosures of these patents do not render Applicants' claimed invention obvious. Applicants respectfully request the

withdrawal of the rejection of claims 1-4 and 7-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) the Picardi patent in view of the Ishitobi patent and the Farkas patent, 2) the Hirabayashi patent in view of the Ishitobi patent and the Farkas patent, or 3) the Sasaki patent in view of the Ishitobi patent and the Farkas patent.

## D. Atsugi et al., Rostoker et al., Ishitobi et al., and Farkas et al.

The Examiner rejected claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) U.S. Patent 5,868,604 to Atsugi et al. (the Atsagi patent) in view of the Ishitobi patent and the Farkas patent, or 2) U.S. Patent 5,389,194 to Rostoker et al. (the Rostoker patent) in view of the Ishitobi patent and the Farkas patent. The Examiner cited the Ishitobi patent and the Rostoker patent for disclosing the use of abrasive particles with an average particle size in the nanometer scale. Applicants respectfully request reconsideration of the rejections based on the following comments.

The Atsugi patent does not disclose any particular method for the production of nanoscale aluminum oxide particles. Presumably, the aluminum oxide particles are obtained from commercial sources. The Atsugi patent does not teach or suggest collections of particles with the extremely narrow particle size distributions disclosed and claimed by Applicants. As noted above, the Ishitobi patent and the Farkas patent do not teach or suggest obtaining particles with the extremely narrow particle size distributions disclosed and claimed by Applicants. Therefore, the combined disclosures of the Atsugi patent, the Ishitobi patent and the Farkas patent do not render Applicants' claimed invention obvious.

The Rostoker patent refers to U.S. Patent 5,128,081 to Siegal for an approach for the production of aluminum oxide nanoparticles. The approach described by the Siegel patent uses a

cold finger that is scrapped. This approach is not suitable for the production of particles with an extremely narrow particle size distribution, as claimed by Applicants. As evidence of this, Applicants enclose a copy of a reference by Siegel et al., J. de Physique C5: Supplement 10 681-686 (October 1988). The inset in figure 1 shows a particle size distribution for titanium dioxide produced by the gas phase condensation approach. The discussion below figure 1 refers to the distribution as "typical of the particle-size distribution produced in the gas-condensation method." The long tail at larger particle sizes in the distribution clearly distinguishes the materials from those claimed by Applicants.

With respect to other availability of the aluminum oxide nanoparticles with a narrower size distribution, we note that Dr. Siegel was instrumental in the formation of Nanophase Technologies Corporation (Nanophase). Nanophase was not able to scale up easily the gas-condensation approach described in the Siegel patent. Thus, a variation on the gas-condensation approach was developed, called Physical Vapor Synthesis Approach. While this new approach is suitable for the production of commercial quantities of powders, the particle size distributions for Physical Vapor Synthesis are considerable broader than those obtained by the gas condensation approach. Applicants enclose with this Amendment an advertisement article by Quinton Ford of Nanophase and pages down-loaded from the Nanophase web site that confirm this conclusion. Therefore, the nanoscale particles needed to form the dispersions claimed by Applicants' claim were not commercially available.

The gas condensation approach and the Physical Vapor Synthesis Approach both produce particle size distributions that are gaussian in character. Gaussian distributions inherently have a long extending tail. Part of this tail can be seen in the distribution in the Siegel et al. reference enclosed. Thus, these

approaches will result in particles with a diameter that is three times larger than the average particle size.

Since the cited references do not disclose the particles with a extremely narrow primary particle size distribution as claimed by Applicants, the combined disclosures of the Rostoker patent, the Ishitobi patent and the Farkas patent do not render Applicants' claimed invention obvious.

Applicants respectfully request the withdrawal of the rejection of claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over either 1) the Atsagi patent in view of the Ishitobi patent and the Farkas patent, or 2) the Rostoker patent in view of the Ishitobi patent and the Farkas patent.

### E. Haisma et al., Ishitobi et al., and Farkas et al.

The Examiner rejected claims 1-4, 7-18 and 23-32 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,622,525 to Haisma et al. (the Haisma patent) in view of the Ishitobi patent and the Farkas patent. The Examiner cited the Haisma patent for disclosing the use of nanoscale silica in a dispersion. Applicants respectfully request reconsideration of the rejections based on the following comments.

The Haisma patent does not describe the production of silicon oxide particles. Therefore, the Haisma patent implicitly discloses the use of commercial silica. Thus, the Haisma patent does not teach or suggest the narrow primary particle size distributions disclosed and claimed by Applicants. As noted above, the Ishitobi patent and the Farkas patent do not teach or suggest obtaining particles with the extremely narrow particle size distributions disclosed and claimed by Applicants. Therefore, the combined disclosures of the Haisma patent, the Ishitobi patent and the Farkas patent do not render Applicants' claimed invention obvious.

Applicants respectfully request withdrawal of the rejection of claims 1-4, 7-18 and 23-32 under 35 U.S.C. §103(a) as being

unpatentable over the Haisma patent in view of the Ishitobi patent and the Farkas patent.

### Double Patenting Rejection

The Examiner provisionally rejected claims 1-32 under the judicially created doctrine of obviousness-type double patenting over either 1) all pending claims of copending Application No. 08/961,735 in view of the Ishitobi patent and the Farkas patent, 2) claims 9-15 of copending Application No. 09/085,514 in view of the Ishitobi patent and the Farkas patent, 3) claims 9-15 of copending Application No. 09/136,483 in view of the Ishitobi patent and the Farkas patent, or 4) all the pending claims of copending Application No. 09/266,202 in view of the Ishitobi patent and the Farkas patent.

Applicants will consider filing a terminal disclaimer over copending Applications 09/085,514 and 09/136,483. Applicants do not believe that any pending claims are obvious over the claims of copending Application No. 08/961,735 in view of the Ishitobi patent and the Farkas patent. In particular, the claims of Application No. 08/961,735 and the disclosures of the cited patents do not disclose collections of particles with less than 1 in one million particle having a diameter greater than about three times the average diameter. Similarly, Applicants do not believe that any claims of the present invention are obvious over any claims of copending Application No. 09/266,202 in view of the Ishitobi patent and the Farkas patent. In particular, none of the claims of Application No. 09/266,202 are directed to dispersions of particles. Therefore, Applicants respectfully request withdrawal of the rejection of claims 1-32 under obviousness double patenting over 1) the claims of copending Application No. 08/961,735 in view of the Ishitobi patent and the Farkas patent and 2) the claims of copending Application No. 09/266,202 in view of the Ishitobi patent and the Farkas patent.

### **CONCLUSIONS**

In view of the above amendments and remarks, Applicants submit that this application is in condition for allowance, and such action is respectfully requested. The Examiner is invited to telephone the undersigned attorney to discuss any questions or comments that the Examiner may have.

The Director of the Patent and Trademark Office is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

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